
DIRECTORY OF GROUNDWATER DATABASES



Wisconsin Groundwater Coordinating Council

April 1998

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Subcommittees continued on inside back cover



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April, 1998

To: Federal, State, Local Government Staff, and University Researchers

Access to information is vital in today's computer age. With our common interest in protecting Wisconsin's groundwater and the costs involved, we need to continue bolstering our efforts in the area of information sharing and exchange. Many databases containing essential information on groundwater quality, quantity, and potential contaminant threats are being maintained by federal and state government agencies, and the University of Wisconsin. However, it is not always obvious what information is available, where it is stored, or who to contact. This directory provides a listing of groundwater related databases, in both computer and paper formats, and a contact person to call for that information. In addition, there are other sections describing closely associated information along with a contact person or a world wide web address.

As you read this document, you should be aware that there may be fees associated with retrieval requests for some of the groundwater databases listed. Our hope is that this document can provide you with contacts to information which will help you do your job, make sound planning decisions, and continue to protect the environment for the future.

Sincerely,

Susan L. Sylvester, Chair
Wisconsin Groundwater Coordinating Council

This directory is organized to help people obtain groundwater information maintained in computerized and non-computerized databases, and to find the assistance they need to make this task easier. The document focuses on Wisconsin's State and Federal agencies and University Extension database information, but does not address information which may be available at the county or local government level. The directory is organized into five major sections:

I. Agency Quick Reference Guide

This section describes the agencies that have responsibilities or conduct activities related to groundwater protection. It also briefly summarizes responsibilities and activities for each agency.

II. Groundwater Database Contents

These tables cross-references the database contents. The first table is grouped by bureau within each agency and the second table lists the major databases individually.

III. Groundwater Database Descriptions and Contact People

This section describes computerized and non-computerized databases on groundwater quality, water supply, geology, well construction, and associated land use or soils. Information on the databases was acquired by posing a list of standard questions to the database stewards and using their response as the description of the database. Each database lists the contact person, or how to obtain computer-generated reports. Questions about the database, its contents, or possible errors in the data should be directed to the contact person listed.

IV. Additional Databases

This section describes additional associated databases, reports, or lists that contain information on operations that may impact groundwater but do not contain groundwater specific information. An example would be a database that tracks facilities that are required to monitor groundwater quality. However, that database does not include the results of the groundwater monitoring.

V. Wisconsin World Wide Web Sites With Groundwater Or Related Information

This section is intended to provide a starting point in searching the world wide web for groundwater or related information. These web sites have a general focus on Wisconsin groundwater and related issues.

Directory of Groundwater Databases

Wisconsin Groundwater Coordinating Council's Monitoring and Data Management Subcommittee

Author: Randell V. Clark, DNR Groundwater Section, Bureau of Drinking Water and Groundwater

Working Group: Brian Coultier (WGNHS), Chuck Warzecha (DHFS), and Randell Clark (DNR)

Thanks for the support and cooperation of all of the agencies represented in this document.

If you are aware of an existing groundwater database that was not included in this document and should be included, please contact Randell Clark at the Wisconsin Department of Natural Resources at (608) 267-7895 or e-mail at CLARKR@DNR.STATE.WI.US.

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I. AGENCY QUICK REFERENCE GUIDE

The following summarizes Wisconsin agencies that have groundwater databases described in this publication and their groundwater protection activities.

AGENCY

ACTIVITIES

DEPARTMENT OF AGRICULTURE, TRADE, AND CONSUMER PROTECTION (DATCP)

Agricultural Resource Management (ARM) Division
P.O. Box 8911
Madison, WI 53708-8911

Agrichemical Resources Management
Division (ARM) (608) 224-4500

- Regulate pesticide use
- Regulate bulk pesticide and fertilizer storage
- Conduct groundwater studies and testing
- Certify pesticide applicators
- Track agrichemical spills and remediation

Food Safety Division (FS) (608) 224-4700

- Conduct inspections of food processors (including water bottlers)
- Conduct sampling of Grade A dairy wells

DEPARTMENT OF HEALTH AND FAMILY SERVICES (DHFS)

DHFS
Bureau of Environmental Health
1414 East Washington Ave.
Madison, WI 53702
(608) 266-1704

- Inspect restaurant, hotel, motel and campground water supplies

DHFS
Bureau of Community Health and Prevention
1414 East Washington Ave.
Madison, WI 53702
(608) 266-1120

- Recommend enforcement standards for substances related to health concerns
- Investigate health effects from contamination incidents
- Develop groundwater standards
- Develop groundwater public health policy

DEPARTMENT OF COMMERCE (COMM)

Division of Safety and Buildings
Bureau of Integrated Services
P.O. Box 2658
Madison, WI 53701-2658
(608) 266-3151

- Regulate private sewage systems
- Approve home water treatment devices
- Approve plats for unsewered subdivisions

Retail Petroleum Services
P.O. Box 7839
Madison, WI 53707-7839
(608) 266-3014

- Regulate installation & maintenance of underground storage tanks, including gasoline tanks for retail sites
- Testing of petroleum products

Storage Tank Regulation
P.O. Box 7837
Madison, WI 53707-7837
(608) 266-7874

- Regulate installation & maintenance of underground storage tanks, including tanks for non-retail sites

PECFA
P.O. Box 7838
Madison, WI 53707-7838
(608) 267-3753

- Claim Review Section reimburses owners or operators of petroleum storage tank systems for remediation
- Site Review Section reviews site investigations, remedial options and closures for COMM managed sites.

DEPARTMENT OF NATURAL RESOURCES (DNR)

DNR
Bureau of Watershed Management
P.O. Box 7921
Madison, WI 53707-7921
(608) 267-7694

- Approve sewage lagoons, municipal and industrial wastewater systems
- License Large scale on-site waste disposal systems
- License wastewater sludge disposal
- License septage disposal

DNR
Bureau of Waste Management
P.O. Box 7921
Madison, WI 53707-7921
(608) 266-2111

- Track operating and abandoned landfill
- Monitor hazardous waste treatment, storage, and disposal
- Administer Recycling program
- Administer Pollution prevention
- Approve mining operation
- Approve environmental restoration & response programs

DNR
Bureau for Remediation & Redevelopment
P.O. Box 7921
Madison, WI 53707-7921
(608) 266-2111

- Remediate environmental contamination (soil, groundwater, etc.)
- Administer Brownfields program
- Redevelopment of contaminated areas
- Respond to spill incidents
- Administer Leaking Underground Storage Tanks program
- Administer Superfund program
- Administer state funded response actions

DNR
Bureau of Drinking Water and Groundwater
P.O. Box 7921
Madison, WI 53707-7921
(608) 266-0821

- Set and enforce public and private drinking water standards
- Monitor public drinking water wells
- Approve public and high capacity wells
- License well drillers and pump installers
- Conduct well driller education
- Implement the Safe Drinking Water Act
- Administer the Wellhead protection
- Administer the Injection Well program
- Conduct water quality planning and education/Wellhead protection
- Facilitate groundwater coordination
- Set and enforce groundwater quality standards
- Monitor groundwater quality and quantity

DNR REGIONAL OFFICES

Northeast Region
1125 N. Military Avenue
Green Bay, WI 54307
(920) 492-5800

South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266

West Central Region
1300 W. Clairemont Ave., Box 4001
Eau Claire, WI 54702
(715) 839-3700

Southeast Region
2300 N. Dr. Martin Luther King, Jr.
Drive, Box 12436
Milwaukee, WI 53212
(414) 263-8500

Northern Region
810 W Maple Ave.
Spooner, WI 54801
(715) 635-2101

Northern Region
107 Sutliff Avenue
Rhinelander, WI 54501
(715) 312-7616

UNIVERSITY OF WISCONSIN (UW)

Central Wisconsin Groundwater Center
University of Wisconsin-Extension
College of Natural Resources, Room 224
UW - Stevens Point
Stevens Point, WI 54481
(715) 346-4270

- Conduct drinking water and groundwater education programs
- Provide technical assistance to local governments
- Develop materials regarding groundwater Best Management Practices
- Collect and analyze groundwater resource data
- Produce educational materials and county groundwater reports
- Conduct research

Wisconsin Geological and Natural History Survey
3817 Mineral Point Rd.
Madison, WI 53705
(608) 262-1705

- Map and inventory groundwater resources and geologic conditions
- Write technical reports and assist regulating agencies
- Monitor groundwater levels and water quality
- Provide education and public information
- Conduct research

U. W. Water Resources Center
1975 Willow Drive
University of Wisconsin
Madison, WI 53706
(608) 262-3577

- Coordinate and administer water resources research in UW system
- Operate designated federal water resource center
- Develop curriculum for children
- Produce research publications

UNITED STATES GEOLOGICAL SURVEY (USGS)

Wisconsin District
U.S. Geological Survey
8505 Research Way
Middleton, WI 53562
(608) 828-9901

- Collect data and conduct studies regarding:
streamflow at gaging stations and other sites
stage and contents of lakes and reservoirs chemical, physical and biological characteristics of surface water and groundwater levels in observation wells
- Conduct geologic mapping
- Conduct research

UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)

Natural Resources Conservation Service
6515 Watts Road, Suite 200
Madison, WI 53719-2726
(608) 264-5341 extension 146 or 148

Soil Science

- Maintain and interpret soil property databases
- Produce digital soil maps
- Rate soils for potential pesticide leaching and runoff

Water Resources

- Provide technical assistance for soil and water

Ecological Sciences

- Provide resource planning and management

Engineering

- Develop farming practice standards for groundwater protection
- Rate soils for potential nitrogen and phosphorus leaching

II. TABLE 1 - GROUNDWATER DATABASE CONTENTS SUMMARY

This table cross-references the database contents. They are grouped by bureau within each agency.

DATABASE CONTENTS	DATCP-AM	DNR-WA	DNR-RR	DNR-WT	DNR-DG	UW-CWGC	WGNHS	USGS	USDA
WATER QUALITY									
INORGANICS	X	X		X	X	X		X	X
PCBs		X			X				
PESTICIDES	X				X	X		X	
VOCs		X			X			X	
BACTERIA		X			X	X		X	
ORGANICS		X			X			X	
WATER LEVEL									
WATER TABLE ELEVATION	X			X	X		X	X	
DEPTH TO WATER	X	X		X	X		X	X	X
WELL CONSTRUCTION					X	X	X	X	
SUBSURFACE GEOLOGY					X		X	X	X
GEOLOCATED (PLS, Lat./Long, etc.)	X	X	X		X	X	X	X	X
LANDUSE		X							

DATCP-AM (Department of Agriculture, Trade, and Consumer Protection, Bureau of Agrichemical Management)
 DNR-WA (Department of Natural Resources, Bureau of Waste Management)
 DNR-RR (Department of Natural Resources, Bureau for Remediation and Redevelopment)
 DNR-WT (Department of Natural Resources, Bureau of Watershed Management)
 DNR-DG (Department of Natural Resources, Bureau of Drinking Water and Groundwater)
 UW-CWGC (University of Wisconsin Extension, Central Wisconsin Groundwater Center)
 WGNHS (University of Wisconsin Extension, Wisconsin Geological and Natural History Survey)
 USGS (U.S. Geological Survey, Water Resource Division)
 USDA (U.S. Department of Agriculture, Natural Resources Conservation Service)

TABLE 2 - INDIVIDUAL GROUNDWATER DATABASE SUMMARIES

DATABASE NAME	CONTACT	DATA FORMAT	DATE RANGE OF DATA	UPDATE FREQUENCY	GEOGRAPHIC EXTENT	GEOLOCATOR	WATER QUALITY DATA	WATER LEVEL DATA	GEOLOGIC DATA	LAND USE DATA	OTHER INFO.
DATCP - Groundwater Unit Database	Lisa Morrison (608) 224-4504	printed report; Paradox database	1989 to present	monthly	statewide	Public Land Survey System (PLSS) (to ¼ ¼ section); WTM	pesticides; nitrates	none	none	atrazine prohibition areas	wells involved in investigations identified by DATCP case ID
DATCP - Monitoring Wells Database	Jeff Postle (608) 224-4503	printed reports; Paradox database	December 1885 to present	quarterly	statewide from special project sites	PLSS	pesticides and metabolites; nitrates	yes	none	none	contains data from over 50 monitoring sites
DNR - Bureau of Waste Management - GEMS Database	Julie Ivanov (608) 267-7550	ORACLE mainframe database	1975 to present	weekly	statewide	local grid; PLSS or State Plane or Latitude / Longitude	inorganics; VOCs	yes	none	none	contains data on over 17,800 monitoring points and 5 million sample results
DNR - Bureau of Remediation and Redevelopment - BRRTS System	Tom Fass (608) 267-3532	ORACLE mainframe database	1989 to present	as events are reported	statewide	Latitude / Longitude	none	none	none	none	maintains info. on soil and groundwater cleanup programs
DNR - Bureau of Watershed Management - WPDES Database	Gail Mills (608) 266-1387 or Mary Jane Ziegler (608) 266-7775	SAS mainframe datasets	1980 to present	monthly	statewide	PLSS	BOD; COD; inorganics; nitrate	yes	none	land spreading sites	well info. and sampling around treated wastewater and sludge discharge and storage
DNR - Bureau of Drinking Water and Groundwater - Groundwater Section Database	Randell Clark (608) 267-7895	ORACLE mainframe database	1988 to present	weekly	statewide	PLSS	nitrate; triazine screens; pesticides; inorganics; VOCs	yes	none	none	currently contains 7,564 wells and 56,190 sample results for 562 parameters

TABLE 2 Cont.

DATABASE NAME	CONTACT	DATA FORMAT	DATE RANGE OF DATA	UPDATE FREQUENCY	GEOGRAPHIC EXTENT	GEOLOCATOR	WATER QUALITY DATA	WATER LEVEL DATA	GEOLOGIC DATA	LAND USE DATA	OTHER INFO.
DNR - Bureau of Drinking Water and Groundwater - Private Water Supply Database	Judy Adams (608) 266-0153	ORACLE mainframe database	1988 to present	weekly	statewide	PLSS	nitrate; bacteria; pesticides; organic chemicals	yes	none	none	currently contains 160,000 well records and 324,000 sample results
DNR - Bureau of Drinking Water and Groundwater - Well Compensation	Tom Riewe (608) 266-8697 or Rick Weigle (608) 2677153	paper files and Paradox database	1985 to present	updated as grants are issued	statewide	PLSS	all contaminants that require a health advisory for drinking water in paper files	none	none	none	25 to 50 grants are funded each year
DNR - Bureau of Drinking Water and Groundwater - WATR - Well Construction Reports	Sandy Hershberger (608) 267-7605	VSAM mainframe database	1988 to present; 1936 to 1979 on microfilm	weekly	statewide	PLSS	none	yes	yes	none	currently 123,000 records with about 300 added monthly
DNR - Bureau of Drinking Water and Groundwater - WATR - Test Results	Sandy Hershberger (608) 267-7605	VSAM mainframe database	1988 to present	monthly	statewide	PLSS	initial well bacti. sample	none	none	none	currently 123,000 records with about 360 added monthly
DNR - Bureau of Drinking Water and Groundwater - High Capacity Well Database	Bill Furbish (608) 266-9264	VSAM mainframe database	After 1936 to present	frequency varies	statewide	PLSS	none	yes	yes	none	currently about 8,800 wells

TABLE 2 - Cont.

DATABASE NAME	CONTACT	DATA FORMAT	DATE RANGE OF DATA	UPDATE FREQUENCY	GEOGRAPHIC EXTENT	GEOLOCATOR	WATER QUALITY DATA	WATER LEVEL DATA	GEOLOGIC DATA	LAND USE DATA	OTHER INFO.
DNR - Bureau of Drinking Water and Groundwater - Public Water Supply Data System	Don Swailes (608) 266-7093	ORACLE mainframe database	mid 1970's to present	weekly	statewide	PLSS	microbiological; chemical; radiological	yes	none	none	currently contains about 16,000 active and inactive public water systems
UW Extension - Central Wisconsin Groundwater Center - Private Wells Database	Dave Mechenich (715) 346-3731	dBASE database	1985 to present	monthly and program based updates	statewide although concentrated on in Central Wisconsin	PLSS	coliform bacteria; nitrate; pH; conductivity; alkalinity; total hardness; chloride	yes	none	none	currently contains over 216,000 sample results
UW Extension - WGNHS - Well Constructor's Reports	Irene Lippelt (608) 262-7430	paper reports	1936 to 1995; 1936 to 1979 on microfilm at DNR;	continuously updated as new reports received	statewide	PLSS	none	yes	yes	none	accuracy and consistency and density of coverage varies
UW Extension WGNHS - Geobase	WGNHS Information Manager (608) 263-7386 or Kathy Massie Ferch (608) 262-9468	paper records and topographic maps and a Paradox database	1860 to present	continuously	statewide	PLSS	none	yes	yes	none	currently contains data on about 35,000 sites and about 12,000 geologic logs
USGS - Groundwater Site Inventory (GWSI)	Bernie Ellefson (608) 821-3849	indexed files in a UNIX system database	approx. 25 years up until 5 years ago	annually	statewide	PLSS and latitude / longitude	conductance; water temperature	yes	yes	none	currently contains 24,000 wells
USGS- Site Specific Water Use Data System (SSWUDS)	Bernie Ellefson (608) 821-3849	indexed files in a UNIX system database	1978 - present	annually for private wells and every 5 years for public wells	statewide	PLSS and latitude / longitude	none	none	none	none	contains data for 2500 public wells and 3200 private wells

TABLE 2 - Cont.

DATABASE NAME	CONTACT	DATA FORMAT	DATE RANGE OF DATA	UPDATE FREQUENCY	GEOGRAPHIC EXTENT	GEOLOCATOR	WATER QUALITY DATA	WATER LEVEL DATA	GEOLOGIC DATA	LAND USE DATA	OTHER INFO.
USGS - Water Quality Data (QWDATA)	Dan Olson (608) 821-3852	indexed files in a UNIX system	1960's to present Data exists back into the 1890's.	weekly	statewide	PLSS or latitude / longitude	yes	yes	none	none	database consists of approx. 90% surface water and 10% groundwater samples
USGS - Observation Well Network Database	Available on the world wide web HTTP://WWW.DWIMDN.ER.USGS.GOV/	on-line screens; 1995 report; yearly summary report	1946 to present	daily or weekly or monthly or quarterly depending on the well	statewide	PLSS and latitude / longitude	none	yes	yes	none	approx. 20 wells measured daily and slug tests and geophysical logs recently completed on 60 wells
USDA - NRCS - State Soil Survey Database (SSSD)	Ken Lubich (608) 264-5341 ext. 148	UNIX system in Prelude database format; Soil Survey Report	new data base released about every 3 years	continuously	statewide	none	none	yes	none	determine potential of soils for agriculture, waste disposal, building site development, or water management	includes names, acreages, and physical and chemical properties. SSSD will be replaced by NASIS by 1999.
USDA - NRCS - Soil Survey Geographic Database (SSURGO)	National Cartography and GIS Center 1-800-672-5559	Digital Line Graphic 3; ARC export	1995 to present	as needed	selected counties	UTM	yes	none	none	same as SSSD data above	contains digitized detailed soil maps, tabular soil database, and metadata
USDA - NRCS - State Soil Geographic Database (STATSGO)	Ken Lubich (608) 264-5341 ext. 148; National Cartography and GIS Center 1-800-672-5559	ARC Export; tab or ASCII delimited; DLG-3; CD ROM of the data is available	none	none	statewide at 1:250,000 scale	UTM	none	none	none	same as SSSD data above	the same data elements as the SSSD

III. GROUNDWATER DATABASE DESCRIPTIONS AND CONTACT PEOPLE

This section lists computerized and non-computerized groundwater quality, water supply, geology, well construction, associated land use, and soils databases. Information on the databases was acquired by posing a list of standard questions to the database stewards and including their responses as the description of the database. Each database lists the contact person and how to obtain access to the computerized databases or simply obtain a computer-generated report. Questions about the database, the information contained within, or possible errors should also be directed to the contact person.

DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

BUREAU OF AGRICHEMICAL MANAGEMENT

TITLE OF DATABASE: MONITORING WELLS DATABASE

The Monitoring Wells Database contains data associated with DATCP's monitoring well program. The primary goal of DATCP's monitoring program is to monitor for pesticides, their metabolites, and nitrate in areas of the state, such as the "Central Sands" region and the Lower Wisconsin River Valley, that are more susceptible to contamination from these compounds. Each monitoring site consists of a nest of three monitoring wells screened to different depths. All monitoring wells are down-gradient from farm fields where pesticides and fertilizer are applied.

Groundwater Unit staff use the data to identify pesticides that are leaching into groundwater or that may potentially cause groundwater contamination. Staff then develop management strategies to prevent groundwater contamination. Strategies may include new groundwater standards for pesticides, coordination of best management practices for pesticides, or modifications to pesticide registration requirements.

The Monitoring Wells Database contains sample results from over 50 monitoring sites, of which 32 remain active. Sample dates range from December 1985 to present. Currently the database is a Paradox 4.5 application, but will be converted to an Access application in 1998. DATCP updates the database quarterly as new sample results are collected and analyzed by DATCP's Bureau of Laboratory Services.

The geographic extent of the database is statewide, but focuses on more susceptible areas of the state. Monitoring well locations are kept in paper files, with wells located to the Public Land Survey System (PLSS) quarter section.

Database Contact:

Jeff Postle (608) 224-4503 in the ARM Division

DATCP - BUREAU OF AGRICHEMICAL MANAGEMENT

TITLE OF DATABASE: GROUNDWATER UNIT DATABASE

Description:

The Groundwater Unit Database contains data associated with private wells and non-community municipal wells that have been tested for pesticides and/or nitrate. The database integrates sample data from many different sampling projects and laboratories (e.g., the Wisconsin State Laboratory of Hygiene (SLOH), DATCP's Bureau of Laboratory Services, pesticide manufacturers, and other private and public laboratories). Groundwater Unit staff use the data to develop and manage regulatory programs related to pesticide contamination of groundwater resulting from general use (non-point sources) of agricultural pesticides. Staff in the Containment and Remediation Unit use the data to help in the oversight of projects involving remediation of pesticide and fertilizer contamination resulting from point sources.

The Groundwater Unit Database contains over 55,000 sample results for almost 20,000 wells. Sample dates range from 1989 to present. Currently the database is a Paradox 4.5 application, but will be converted to an Access application in 1998. DATCP also keeps many of the paper laboratory sheets and well owner letters for results in the database. DATCP updates the database as new sample results are received from any one of many sources listed below. Data from SLOH are added to the database via a download from the Department of Natural Resources' GRN system one to four times a year.

Data in the Groundwater Unit Database comes from several different sources. Many of the triazine results for private and non-community wells are received from SLOH. DATCP conducts its own sampling programs and investigations for pesticides and nitrate in groundwater. DATCP also gets pesticide sample results from pesticide manufacturers, other state and federal sampling programs, and local groundwater quality agencies. Data in the database are coded to identify the laboratory that analyzed the sample and the study for which the sample was originally collected.

The geographic extent of the database is statewide, with about 85% of the wells located to the Public Land Survey System (PLSS) quarter-quarter section. DATCP staff check well locations in the field when a well is involved in a department investigation, remediation project, or sampling program. In 1998, DATCP will locate these wells using global positioning system (GPS) tools. The locations of other wells are provided by the agency or individual collecting the samples. DATCP uses geographic information system (GIS) tools to manage and analyze these well data. GIS well layers for pesticides and nitrate are maintained in Wisconsin Transverse Mercator (WTM - NAD 27) coordinates.

Database Contact:

Lisa Morrison (608) 224-4504 in the ARM Division

DEPARTMENT OF NATURAL RESOURCES

BUREAU OF WASTE MANAGEMENT

TITLE OF DATABASE: GROUNDWATER AND ENVIRONMENTAL MONITORING SYSTEM (GEMS)

Description of Database

GEMS captures and maintains basic information on monitoring points (including monitoring wells, private wells, leachate wells, lysimeters, gas wells, surface water monitoring points) and the associated sampling results. The data base was developed in the late 1970's to store groundwater quality information from landfills and landfill monitoring well construction information. The system stores groundwater quality data from landfills and uses it to determine when groundwater quality standards are exceeded. Groundwater quality data is currently used to document 1) baseline groundwater quality prior to landfill construction, 2) detection monitoring required at the site once operations begin and 3) assessment monitoring conducted after the site has been identified as having groundwater contamination.

The system is used to evaluate environmental impacts at sites and determines the effectiveness of selected remedial action by producing reports including time vs. concentration plots, box plots and tabular presentations of the data.

Most of the information is from monitoring wells at 510 sites (including solid waste, hazardous waste, SUPERFUND, municipal waste, industrial waste and construction/demolition landfills). The system also stores information from other sites such as mines, spills, beneficial reuse projects, landspreading sites and deer pits. Before a sampling point can be entered onto GEMS, the facility it is associated with must be given a license or monitoring number. The department requires that the monitoring point be given a 3 digit sample point ID number and a location according to a local grid system, state plane coordinate system or latitude and longitude (in the past points were identified by township, range, and ¼ ¼ section).

The locational information is usually provided by an environmental consultant working for the facility owner. In addition to the required information, optional information available, for approximately half the wells in the system, is casing diameter, type of well casing, well type (screened at or below the water table), length of screen, depth to bottom of well from top of casing, and date the well was constructed.

Data available on the system is from 1975 to present. Most of the data is submitted and updated on a quarterly or semi-annual basis by facilities required to do so by the department. Prior to 1996 most data was submitted on preprinted Department forms. As of February 1998, 385 landfills submit data electronically, including most large sites. The samples are analyzed at various laboratories that are certified by the Department. A small percentage of samples that are collected at the sites by the Department and analyzed at the State Laboratory of Hygiene are also stored on GEMS. Most of the data prior to 1985 is routine inorganic data such as alkalinity, hardness, specific conductance, pH, chloride, chemical oxygen demand, iron, sulfate and boron. Our revised code, which became effective January 1, 1988, required a minimum of four rounds of baseline sampling for copper, manganese, TDS, zinc, arsenic, barium, cadmium, chromium, fluoride, lead, mercury, nitrate, selenium and silver; and 2 rounds of VOCs. The revised code also requires landfills with impacts to submit an infield conditions report with VOC sampling from each well. This newly required data is stored on GEMS. The parameters are identified according to EPA STORET parameter codes. Water level data is available for all the monitoring wells.

Other information available on GEMS for each facility includes the license number, facility identification

number (FID), location, monitoring contact person, department assigned staff, parameters required to be sampled for each set of monitoring devices and sampling results for that facility.

GEMS is a VAX - ORACLE database, with information on over 17,800 monitoring points and over 5 million sample results. Information about the monitoring wells and other sampling points is provided by either the facility owner or their consultant. The sampling results are provided by the facility owner, a consultant or a certified laboratory. The geographic extent of the data coverage is statewide.

Managing Solid Waste Data with GEMS and Associated Applications (An instructional manual for GEMS (Groundwater and Environmental Monitoring System)) September 1997 is available from the Bureau of Waste Management.

Database Contact:

Julie Ivanov (608) 267-7550 in the Bureau of Waste Management

DNR - BUREAU FOR REMEDIATION AND REDEVELOPMENT

TITLE OF DATABASE: BUREAU FOR REMEDIATION AND REDEVELOPMENT (RR) TRACKING SYSTEM (BRRTS)

Description of Database

BRRTS captures and maintains basic event information on the Department's Soil and Groundwater clean up programs. Additionally, the database contains site specific information for contamination incidents including: Brownfields, Leaking Underground Storage Tanks (LUST), Environmental Repair sites, Superfund (NPL) sites, Spills and Abandoned Containers programs. All site information is keyed to a unique activity code.

The database is a VAX-ORACLE database with a client server component. The database has approximately 60,000 individual site records. The data is updated as events are reported by regional file managers.

The geographic extent of data coverage is statewide governed by regional boundaries. A large portion of our sites will be GEO located using latitude/longitude by the end of 1998.

The system maintains information on consultants, Responsible Parties, cleanup actions, impacts on the environment and contaminant types.

BRRTS database tables are also accessed through a client server system and distributed to the RR bulletin board system and the RR web site.

Database Contact:

Tom Fass (608) 267-3532 in the Bureau for Remediation and Redevelopment

DNR - BUREAU OF WATERSHED MANAGEMENT

TITLE OF DATABASE: WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM (WPDES) GROUNDWATER DATABASE

Description of Database

Basic well description, location information and well sampling results are stored in this database. The wells tracked are placed around points where treated wastewater or sludge are discharged or stored. Both upgradient and down gradient wells are monitored. The well sampling results are used to determine compliance with state groundwater quality standards and Wisconsin Pollution Discharge Elimination System (WPDES) permits.

This system was designed in 1980 and resides on the Department of Administration computer known as Infotech. Access to the system is limited to staff knowledgeable with the Infotech system. Typical data retrievals are of all well data for a given permitted facility for a given data range. Historical data going back to 1980 is available.

Most facilities are required to monitor groundwater wells quarterly. Typical sampling parameters include biochemical oxygen demand, chemical oxygen demand, ammonia, nitrate plus nitrite, chloride, sodium, total dissolved solids, iron, manganese, sulfate, calcium, pH, hardness, alkalinity, and specific conductivity. Data is updated monthly. Depth to groundwater and groundwater elevation are usually measured.

Select data stored in this system is uploaded to the DNR Bureau of Waste Management's GEMS database.

Database Contact:

Gail Mills (608) 266-1387 or
Mary Jane Ziegler (608) 266-7775 in the Bureau of Watershed Management

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: GROUNDWATER SECTION PROGRAM DATABASE

Description of Database

This database captures and maintains basic information on wells and the associated well sampling results from projects funded through groundwater monitoring research projects or Nonpoint Priority Watershed groundwater sampling. Additionally, the database acts as a repository for well sampling data that does not currently go into a Department program system tied into the Groundwater Retrieval Network (GRN) system. All database Information is keyed to the Wisconsin Unique Well Number. Well and sample data must be assigned a unique well number before being added to the database. Sample data uses an EPA STORET parameter code to identify the analysis. The system began with the development and implementation of the Wisconsin Unique Well Number back in 1988.

The database is a VAX - ORACLE database, with information on 7,564 wells (90.5% private drinking water, 7.5% monitoring, and 2% other) and 56,190 sample results (14.7% nitrate nitrogen, 5% triazine immunoassay screens, and lesser percentages of 560 other substances, mostly pesticides and organic chemicals). Groundwater project researchers and county watershed staff collect most well data from information provided by the homeowner or resident on the Department's Well Inventory Form 3300-67 rev. 8-93. The State Laboratory of Hygiene (SLOH) analyzes most of the sample data and transfers it electronically on a weekly basis. A small number of additional well and sample records are coming from other sources and are being uploaded through a PC upload mechanism.

The geographic extent of data coverage is statewide, but is governed by the specific location of each groundwater research project or the Nonpoint Priority Watershed boundaries. All well records have a geolocation coordinate of Public Land Survey (PLS) or latitude-longitude. Over 99.5% of the well records have at least township, range, and section PLS coordinates, and over 99.4% have a latitude-longitude coordinate for the well. Over 97% of the records are located to the ¼ ¼ section using Plat books. Additionally, a Wisconsin Transverse Mercator (WTM) coordinate is available on over 99% of the wells using a protraction program to the center of the PLS coordinate or from the latitude-longitude coordinate. Well locations are digitized from 1:24,000 scale USGS topographic quadrangle sheets for the majority of all Nonpoint Priority Watershed projects.

Sampling data consists of mostly nitrate nitrogen and triazine immunoassay screen analysis. A small number of other pesticide (atrazine, alachlor, metribuzine, metachlor, et.), organic (carbon tetrachloride, chloroform, toluene, ethyl benzene, et.), and inorganic (calcium, copper, lead, chloride, sulfate, etc.) samples are also available.

Additional references to this database and other program databases accessible through the GRN system are contained in: the "Report to the Legislature - August 1997"; the "Fiscal Year 1997 Groundwater Quality Monitoring Plan"; the DNR Groundwater Information web site

[Http://www.dnr.state.wi.us/org/water/dwg/gw/](http://www.dnr.state.wi.us/org/water/dwg/gw/); and all Nonpoint Source Priority Watershed Plans since 1993.

Database Contact:

Randell Clark (608) 267-7895 in the Bureau of Drinking Water and Groundwater

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: PRIVATE WATER SUPPLY DATABASE

Description of Database

This database was set up as a means to provide access to general statewide water well information and their related water quality sampling results. The Groundwater Retrieval Network (GRN) system is the mechanism to access this data. All database information is keyed to the Wisconsin Unique Well Number. Well and sample data must be assigned a unique well number before being added to the database. Implementation of the Wisconsin Unique Well Numbers (WUWN) began back in 1988. Sample data use an EPA STORET parameter code to identify the analysis.

The database is a VAX-ORACLE database, with information on 160,000 wells (90.7% privately owned, 6.7% non-community public wells and 2.6% others.) Sample data consists of over 65,000 collections, which reflect results for over 324,000 parameter results. The State Laboratory of Hygiene (SLOH) analyzes the sample data and transfers it electronically on a weekly basis.

The source of 80% of these wells is from the well and test results system (WATR), which is data supplied by well drillers. Updates run weekly contain average of 300 well construction reports. Most other well data comes from onsite visits done by DNR and County Health personnel. Information is accumulated from the owner, visual observation and occasionally from a copy of pre 1988 construction reports. This information is keyed directly into the database from Groundwater Monitoring Inventory Form (3300-67) or Field Inspection Water Supply form (3300-26)

The geographic location for each well is defined by Public Land Survey (PLS) coordinates, usually determined by the well driller or field staff person's use of a Plat book. Over 97% are located to the ¼ ¼ or government lot detail. These PLS coordinates are in turn translated electronically to a latitude-longitude or Wisconsin Transverse Mercator (WTM) coordinate.

Access to this data can be online, by hardcopy reports, or data file transfers.

The Groundwater Retrieval Network (GRN) User Documentation is available from the DNR, Bureau of Drinking Water and Groundwater. (608) 266-0821

Assigning and Verifying Wisconsin Unique Well Numbers is available from DNR, Bureau of Drinking Water and Groundwater (DNR Pub DG-040) or DATCP ARM Division (608) 224-4500 (ARM Pub 27)

Database Contact:

Judy Adams (608) 266-0153 in the Bureau of Drinking Water and Groundwater

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: WELL COMPENSATION

Description of Database

The purpose of the computerized part of the database is to track grants that have been issued to replace contaminated private wells. Eligible contamination levels are those that exceed a health advisory for drinking water other than bacterial contamination. The computerized database for grant tracking is in the Bureau of Community Assistance on a PC in Paradox software. The Bureau of Drinking Water and Groundwater keeps only the original paper files except for Well Construction Reports, which are computerized in a separate data system.

The database was initiated in 1992 and contains information from 1985 into 1997. Twenty-five to 50 grants are funded each year and entered into the grant tracking system on a weekly or monthly basis (every time a grant claim is processed). The computerized database is used only to record presence of test parameters. Non-computerized sampling results are in paper files maintained by the Bureaus of Drinking Water and Groundwater and Community Assistance.

Sampling data consists of all contaminants that require a health advisory for drinking water. Parameters include VOC's, inorganics (nitrates, heavy metals, radioactive agents), semivolatiles, pesticides, and PCB's.

The geographic extent of the database information is statewide in extent and is located with the Public Land Survey (PLS) system, within a 1/4 section.

Database Contact:

Tom Riewe (608) 266-8697 for paper files in the Bureau of Drinking Water and Groundwater
Rick Weigle (608) 267-7153 for computerized and paper files in the Bureau of Community Assistance

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: WELL AND TEST RESULTS (WATR) - WELL CONSTRUCTION REPORTS

Description of Database:

Well construction report data for all private and public wells constructed, replaced or reconstructed in Wisconsin on or after January 1, 1988 are included in this database.

Beginning on January 1, 1988, new well construction report/test result forms included a 2-alpha 3-numeric Wisconsin Unique Well Number (WUWN). The number is a duplicate unique well number included on both the well construction report and the test result portion of the form. This helps to match reports and samples for submission to the department within 30 days of completion of the well, required by ch. NR 812, Wis. Adm. Code on Well Construction and Pump Installation. A well inventory of all reports is kept historical. No changes are made to owner names; however, addresses and location information will be changed if it is found to be incorrect. This information will be available to help determine what the geology in a specific area consists of or help in determining why the well might not be functioning properly. The WUWN is the key data element.

The record size is 1875 characters located on an Infotech file. As of February 1, 1998, there were 136,000 well construction reports in the database, adding approximately 300 reports weekly.

After the well constructor submits the report, they are reviewed for compliance, coded and sent to an outside vendor to be keypunched. A tape is returned to our office and run into the current database. Everything on the well construction report form is keyed into our database.

Access to the data is through on-line screens or program reports. Reports available include the matches and no matches of reports vs. test results; lists of well construction reports by driller; legal description; date of completion; facsimiles of well construction reports.

Prior to 1988, and since 1953, well construction reports and water test results were submitted to our department and were kept track of on cards by well driller name. Well reports were filed by county and completion date. The test results were filed by driller name. Up until 1979 the reports are available on microfilm.

Database Contact:

Sandy Hershberger (608) 267-7605 in the Bureau of Drinking Water and Groundwater

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: WELL AND TEST RESULTS (WATR) SYSTEM - TEST RESULTS

Description of Database

The test result portion of the database consists of test results for all private and public wells constructed in Wisconsin on or after January 1, 1988 that include a Wisconsin Unique Well Number (WUWN). However; the test result portion of the database also includes samples of wells exclusively with a Wisconsin Unique Well Number (WUWN), not necessarily constructed after 1988. The test result portion of the database also includes samples for any wells that have been inspected and inventoried. The well is labeled with a pre-printed WUWN and sampled. Any samples that have a WUWN included on the form will be entered. The WUWN, collection date, collection time and lab slip number are the key data elements.

Beginning on January 1, 1988, new well construction report/test result forms included a 2-alpha 3-numeric WUWN. The number is a duplicate unique well number included on both the well construction report and the test result portion of the form. This helps to match samples and reports for submission to the department within 30 days of completion of the well, required by ch. NR 812, Wis Adm. Code, titled Well Construction and Pump Installation. A well inventory of all reports is kept historical. No changes are made to owner names. This information will be available to help determine water quality as well.

The record size is 579 characters located on an Infotech file. There are currently 130,000 test results in the database, adding approximately 360 results weekly.

After the well constructor/pump installer or regional/county staff take the sample, they submit the sample along with the test result form to a specific laboratory. The laboratory sends the test result form, complete with the test results to the Public Water Supply Section. Any samples submitted to the State Laboratory of Hygiene (SLOH) are analyzed and transferred to our department on a weekly basis. The data is downloaded to the Test Result system once a month. The test result forms from private laboratories are reviewed and sent to an outside vendor to be keypunched. A tape is returned to our office and uploaded into the current database. All the fields on the test result forms are keyed.

Access to the data is through on-line screens or program report. Reports available include the matches and no matches of test results vs. well construction reports, lists of test results by driller, and facsimiles of bacteriological lab sample results.

Prior to 1988 and since 1953, well construction reports and water test results were submitted to our department and were kept track of on cards by well driller name. Well reports are filled by county and completion date. The test results were filed by driller name. Up until 1979 the reports are available on microfilm.

Database Contact:

Sandy Hershberger (608) 267-7605 in the Bureau of Drinking Water and Groundwater

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: HIGH CAPACITY WELL DATABASE

Description of Database

The database goal is to track high capacity well water withdrawal permits and changes in the owner/operator of well. The data covers all high capacity wells. Wells constructed before, at or about the turn of the century (Pre -1936) may not be recorded.

Records are available on about 8800 wells/permits in a VSAM/COBOL database on the Department of Administration mainframe. The file is updated about once a month. Most of the wells are irrigation, industrial and miscellaneous types. The database also serves as a repository for limited geological information on municipal wells. Most of the information changes very little except for the owners and operators of the wells. Coverage is statewide.

Data is collected from high capacity well applications and well construction reports (as modified by WGNHS well logs). Geology is interpreted from well construction reports prepared by well drillers and is modified when well logs are received from WGNHS. Data fields are limited.

Public Land Survey coordinates to 1/4, 1/4 or govt. lot are available for 97%+ of the records.

When available, high capacity well permit numbers are linked to Wisconsin Unique Well Numbers in the comment section of the Well Construction Report

Database Contact:

Bill Furbish (608) 266-9264 in the Bureau of Drinking Water and Groundwater
Can request batch printouts.

DNR - BUREAU OF DRINKING WATER AND GROUNDWATER

TITLE OF DATABASE: PUBLIC WATER SUPPLY DATA SYSTEM

Description of Database

This database was developed to store and maintain water system inventory information, operational parameters, physical plant details, and Safe Drinking Water Act compliance data. Analytical data in the system dates from the mid 1970's to present and covers microbiological, chemical, and radiological quality of public water systems in Wisconsin.

The Public Water Supply ORACLE database contains inventory information and sample results for approximately 16,500 active and inactive public water systems. The inventory and analytical data in the system is reviewed and updated daily and the system is connected to all networked DNR offices throughout the State. Data were obtained from Department inspections, from submissions by engineers, well drillers, and pump installers. All analytical data are passed through maintenance programs prior to entry in the system and other data are manually reviewed to ensure accuracy prior to entry in the database.

Currently, 100% of geolocations are based on converted 1/4 1/4 sections but the data are being replaced with updated information obtained from 1:24,000 topo maps and differential GPS units.

Database Contact:

Don Swailes (608) 266-7093 in the Bureau of Drinking Water and Groundwater

UNIVERSITY OF WISCONSIN EXTENSION

CENTRAL WISCONSIN GROUNDWATER CENTER

TITLE OF DATABASE: CENTRAL WISCONSIN GROUNDWATER CENTER PRIVATE WELLS DATABASE

Description of the Database

This database captures private well data generated through drinking water education programs and other voluntary private well testing through the Environmental Task Force (ETF) Lab at UW-Stevens Point. The database supports groundwater quality research and the Groundwater Center's efforts to educate the public about groundwater quality. The data is used to generate maps and reports and to answer public concerns about groundwater quality within defined geographic areas. The Groundwater Center should be contacted (715-346-4270) for information on desired geographic area.

The private wells database is a PC based dBASE system containing over 35,000 samples and 216,000 analyses, generally from 1985 to the present. Data captured include a unique sample identifier, water quality data (coliform bacteria, nitrate, pH, conductivity, alkalinity, total hardness, chloride, and small numbers of other parameters such as lead, iron, fluoride, and arsenic), well construction data for approximately 50% of records (install date, method, diameter, and depth of well, casing, and water), and public land survey locational information (~70% to ¼ ¼ section).

The database is an ongoing project with monthly and program based updates. Geographic coverage is statewide, although samples are concentrated in Central Wisconsin and where county based drinking water education programs were most active. Samples are collected by the homeowner in bottles provided by the ETF Lab. Locational and well construction information is also provided by the homeowner, although lab and county UWEX staff provide assistance. Locational data is checked as possible by Groundwater Center staff for consistency and obvious errors. Summary information from this database can be found in the report "Wisconsin Private Well Water Quality, Data Summary Report" prepared by the Wisconsin Geological and Natural History Survey and the Department of Health and Social Services, April, 1995.

Database Contact:

Dave Mechenich (715) 346-3731 at the Central Wisconsin Groundwater Center

UNIVERSITY OF WISCONSIN EXTENSION
WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY

TITLE OF DATABASE: WELL CONSTRUCTOR'S REPORTS

Description of Database

More than 400,000 Wisconsin Department of Natural Resources (WDNR) Well Construction Reports (WCRs) make up this data collection. The WCRs are submitted by well drillers to WDNR to document how a well was constructed, the materials encountered, and water levels found during construction.

The data collection was started in 1936 and is continuously updated as new reports are received and processed. At present there is a several year backlog in the processing of WCRs.

Accuracy and consistency of data in the WCRs varies. Geographic density of the data varies from a few WCRs per township to over 700 WCRs per township.

Records are filed by the Public Land Survey System (township, range and section) and location is usually to the nearest quarter or quarter-quarter section.

Reports from 1936 - 1979 were microfilmed and are available as microfiche from the WDNR.

Information on WCRs includes depth to water, ownership, driller, year installed, well construction specifications, and land use activities.

Database Contact:

Irene Lippelt at (608) 262-7430 for information on how to order copies of WCRs.

WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY

TITLE OF DATABASE: GEOBASE

Description of Database

Geobase is the WGNHS subsurface lab database for sites in Wisconsin. Examples of information contained in the database include: location by Public Land Survey System, owner, hole depth, stratigraphy, well construction, and water levels. This information comes from WGNHS geologic logs, USGS database GWSI, selected WDNR Well Constructor Reports, and miscellaneous subsurface or outcrop related data.

Sources of information contained in the database include WGNHS staff, USGS staff, well drillers, professors, graduate students, and WDNR staff.

Locations are by Public Land Survey System. Locational accuracy varies from within 100 feet to approximately 1 mile. Most sites are located to at least a quarter-quarter section.

The data were usually collected to provide basic subsurface geologic information, many times as part of a local or regional geologic or hydrologic study. The majority of rock samples were collected by well drillers.

Density of data points varies widely throughout the state, but is usually higher in more populated areas. The database contains information on approximately 35,000 sites including about 12,000 geologic logs. The computerized database has approximately 1400 files with about 500 megabytes of data.

The database is continuously updated. Records date from 1860 to present.

The data collection consists of paper records, topographic maps, and a computer database in Paradox version 5.0 software.

Database Contact:

The contact for further information on this database is the WGNHS Information Manager at (608) 263-7386 or the Geologist Kathy Massie Ferch at (608) 262-9468.

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCE DIVISION

The National Water Information System (NWIS) has three groundwater related databases. The link between the 3 databases is the Site File that contains the following information on the site (well):

- Well Location
- Owner Information
- Well Construction (very limited information)
- Geologic Unit (very limited information)

The three databases described on subsequent pages are:

- Groundwater Site Inventory
- Site Specific Water Use Data System
- Water Quality Data

TITLE OF DATABASE: GROUNDWATER SITE INVENTORY (GWSI)

Description of Database

The GWSI database is a part of the USGS National Water Information System (NWIS). It contains information related to groundwater in the state.

The database consists of indexed files managed by a UNIX-based software system that allows data to be retrieved on the basis of site ID, geographic location, aquifer, hydrologic unit, drainage basin, latitude-longitude, or site use. Most of the data were collected from well construction reports. Data is also collected in geographic areas chosen for special study. In addition, there is a network of 140 sites statewide where water-level information is collected with frequencies ranging from daily to once every few months.

The database contains 24,000 wells throughout the state. All records are located by geolocation coordinate of Public Land Survey and latitude-longitude. The latitude-longitude accuracy is encoded within the database. Public land survey accuracy is to the section or $\frac{1}{4}$ $\frac{1}{4}$ section. To retrieve data for a specific area, a polygon must be specified using latitude and longitude. Location known in the Public Survey system must also be converted this way.

Project cooperators can access the database, other agencies or individuals can submit requests for information to USGS. A fee will be charged for large requests. All requests must either include latitude-longitude, drainage basin or hydrologic unit.

Additional reference is available in: NWIS National Water Information System User's Manual, Volume 2, Chapter 4. Ground-Water Site Inventory System. Additional information on the USGS Wisconsin District can be found on the website at [Http://www.dwimdn.er.usgs.gov/](http://www.dwimdn.er.usgs.gov/).

Database Contact:

Bernie Ellefson at (608) 821-3849 at the USGS

USGS - WATER RESOURCE DIVISION

TITLE OF DATABASE: SITE SPECIFIC WATER USE DATA SYSTEM (SSWUDS)

Description of Database

The SSWUDS database is a part of the USGS National Water Information System (NWIS) dedicated to water usage information. The database was initiated in 1978; and consists of a water user file, a measurement point file, an annual measurement file, and a conveyance file.

The database consists of indexed files managed by a UNIX-based software system that allows data to be retrieved on the basis of user number, site ID, year, and conveyance method. Water use information from 2500 public supply wells are stored for domestic, commercial, industrial, and other categories. Water use data is also updated for 3200 private supply wells. These uses include non-irrigation agriculture, commercial, domestic, industrial, irrigation, mining, livestock, fossil-fueled power, and nuclear power. The data is primarily collected by state agencies and updated annually for private wells, and once every 5 years for public wells.

The data coverage is statewide. All records are located by both geolocation coordinate of Public Land Survey and latitude-longitude. The latitude-longitude accuracy is encoded within the database. Public land survey accuracy is to the section or ¼ ¼ section. To retrieve data for a specific area, a polygon area must be specified using latitude and longitude. Location known in the Public Survey system must be converted this way.

Project cooperators can access the database, other agencies or individuals can submit requests for information to USGS. A fee will be charged for large requests. All requests must either include latitude-longitude, or user type, year, and/or county/township name.

Additional reference is available in: NWIS National Water Information System User's Manual, Volume 2, Chapter 5. Water-Use Data System. Part 1. Site Specific Water-Use Data System (SSWUDS). Additional information on the USGS Wisconsin District can be found on the website at [Http://www.dwimdn.er.usgs.gov/](http://www.dwimdn.er.usgs.gov/).

Database Contact:

Bernie Ellefson at (608) 821-3849 at the USGS

USGS - WATER RESOURCE DIVISION

TITLE OF DATABASE: WATER QUALITY DATA (QWDATA)

Description of Database

The QWDATA database is a water-quality storage and retrieval system that is part of the USGS National Water Information System. The database consists of water-quality files, site files, and shared reference files. USGS Watstore parameter codes are used to identify specific parameters and analytical methods.

The database consists of keyed-indexed files in Ingres tables managed by a UNIX-based software system that allows data to be retrieved on the basis of agency code, site identification number, date and time, and medium code. Data are primarily collected by the USGS and are usually analyzed by the USGS National Water-Quality Laboratory or by the Wisconsin State Laboratory of Hygiene (SLOH). Data are updated on a weekly basis. The database consists of approximately 90% surface-water samples and 10% ground-water samples.

The geographic extent of data coverage is statewide. All records have a geolocation coordinate of Public Land Survey or latitude-longitude. Latitude and longitude accuracy may be to the nearest second (75 ft). Accuracy is variable but is coded in the database. Within a public land survey, accuracy is to the section or 1/4 1/4 section. To retrieve data for a specific area, a polygon using latitude and longitude must be specified. Locations known in the Public Land Survey system must also be converted this way.

Water Quality data consists of inorganics (metals, industrial chemicals), organics, pesticides, VOC's, and other parameters dependent on project.

Project cooperators can access database. Other people may submit information requests to USGS. Small information requests are free. Large requests may require a charge. All requests need to include a location in latitude and longitude (as a point or polygon).

Additional reference on the database is available in: NWIS National Information System User's Manual, chapter 2, Water-Quality System, version 1.2, USGS, Reston, Virginia. Additional information on the USGS Wisconsin District can be found at the website at **[Http://www.dwimdn.er.usgs.gov/](http://www.dwimdn.er.usgs.gov/)**.

Database Contact:

Dan Olson at (608) 821-3852 at the USGS

USGS - WATER RESOURCE DIVISION

TITLE OF DATABASE: OBSERVATION WELL NETWORK DATABASE

Description of Database

The ground-water observation network includes water levels measured in approximately 140 wells through out Wisconsin. The network is a part of a comprehensive and on going effort to maintain a water-resource database responsive to the needs of the state and the nation. This program has been in place since 1946 and continues through the efforts of the staff and an extensive network of observers. Approximately 20 wells are measured daily with electronic recorders; the remainder are measured on a weekly, monthly or quarterly basis by USGS staff or observers.

Slug tests and geophysical logs were completed on about 60 wells to improve the quality of the network. All digital recorders were replaced with data loggers. Data for the annual report, "Water Resources Data - Wisconsin, water year 1995", was completed. Additional reports include, "Analysis of water-level fluctuations in Wisconsin wells: Wisconsin Geological and Natural History Survey Information Circular 63", "Trends in ground-water levels in Wisconsin through 1981: Wisconsin Geological and Natural History Survey Information Circular No. 43", "Trends in ground-water levels in Wisconsin, 1967-71: Wisconsin Geological and Natural History Survey Information Circular No. 21", and "Trends in ground-water levels in Wisconsin through 1966: Wisconsin Geological and Natural History Survey Information Circular No. 9."

The data is available for selected wells through the USGS Water Resources of Wisconsin world wide web site at **[Http://www.dwimdn.er.usgs.gov/](http://www.dwimdn.er.usgs.gov/)**.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

State Soil Survey Database (SSSD)

SSSD includes names, acreages, and physical and chemical properties for soils in all Wisconsin Counties. It also includes ratings of the limitations and potentials of the soils for agriculture, waste disposal, building site development, water management, and other land uses. Soil properties included are texture, percent clay and organic matter, slope, permeability, coarse fragment content, bulk density, pH, cation exchange capacity, hydrologic group, flooding frequency and duration, soil water table depth and duration, ponding, depth to rock, and many others. Soil interpretations include soil pesticide leaching and runoff potential, and many other factors.

Data is collected as NRCS soil scientists map and characterize the soils in each county in detail (about 16 staff years per county). Soil Survey projects are completed in most Wisconsin Counties. Initial, "once-over", soil surveys for the last few Counties in NW Wisconsin are in progress. Soil survey update projects, to bring the existing maps and soil data up to current standards, are also active in a few Wisconsin Counties.

The database is updated continuously as about 20 NRCS Soil Scientists continue to collect new data and evaluate existing data. A new "official" database is released for general use about every 3 years.

The soils data and soil maps are published in a Soil Survey Report as each County is completed. This data reflects current soil knowledge at the time of printing, and is accurate for most applications. If the published Soil Survey Report is more than 3 years old, however, the tabular data is usually not the most current data for the County. A paper copy of the "official" soils data for each County is maintained in the NRCS "Field Office Technical Guide" in each local NRCS office.

The soils data for all Counties in Wisconsin is maintained at the NRCS State Office in Madison in a UNIX/Prelude database. The official data for the entire U.S. is available from the NRCS National Soil Data Access Facility world wide web site [Http://www.statlab.iastate.edu/soils/nsdaf/](http://www.statlab.iastate.edu/soils/nsdaf/). Another web site for information and data is [Http://www.ncg.nrcs.usda.gov/nsdi_node.html](http://www.ncg.nrcs.usda.gov/nsdi_node.html)

Database Contact:

Ken Lubich, NRCS State Soil Scientist (phone: 608-264-5341 ext. 148
e-mail: klubich@wi.nrcs.usda.gov, internet: [Http://www.wi.nrcs.usda.gov/](http://www.wi.nrcs.usda.gov/))

National Soil Information System (NASIS)

The SSSD database described above is being replaced by the NASIS database. NASIS includes SSSD data and additional soil data elements and is maintained in a UNIX/INFORMIX database. The current official data is in SSSD and will be maintained in both databases during a transition period lasting until about 1999. After that, the soil data will be maintained only in NASIS at a National or Regional site. For more NASIS information, refer to the contacts listed under the SSSD database above.

Soil Survey Geographic Database (SSURGO)

SSURGO includes the digitized detailed soil maps (including drainage and special symbols), the tabular soil database from NASIS or SSSD, and metadata files. The map data are in 7.5 or 3.75 minute quadrangle format. SSURGO is the most detailed level of soil geographic data developed by the National Cooperative Soil Survey. The soil maps were developed at a scale from 1:12,000 to 1:24,000, and the smallest map units are about 2 acres in size.

Separate SSURGO files are developed for each soil survey area, usually a single county. To date (October, 1997) only a few Wisconsin soil surveys are digitized to SSURGO standards. SSURGO data is expected to be complete for most Wisconsin Counties by the year 2000.

SSURGO data are available in DLG3-optional or ARC Export format and are in the UTM coordinate system. The datum can vary and is either NAD83 or NAD27. Space required for the data varies widely depending on the size of the survey area and polygon density. Map and attribute data for an average Wisconsin county requires about 100 to 150 MB.

For more SSURGO information, or to obtain SSURGO data, refer to the contacts listed under the SSSD database above. Or contact the NRCS National Cartography and GIS Center (NCG) in Fort Worth, Texas at 1-800-672-5559.

State Soil Geographic Database (STATSGO)

STATSGO is a digitized general soil map of Wisconsin with a soil attribute database. The map was developed at a scale of 1:250,000, and the smallest map units are about 2.3 square miles in size. The soil attribute data includes the same data elements as the SSSD database described above. STATSGO is designed primarily for multi-county, state, or regional analysis.

The STATSGO map data are available in DLG3-optional or ARC Export format. The attribute data is available in variable length, tab delimited, ASCII or ARC Export files. The map and attribute files for Wisconsin STATSGO are about 16MB in DLG-3 optional format and about 20MB in ARC Export format.

STATSGO data is available for the entire U.S. on CD ROM, including a user's guide and metadata from the NRCS NCG Center (see SSURGO). Or, refer to the contacts listed under the SSSD database above, for more information.

IV. ADDITIONAL DATABASES OR GROUNDWATER RELATED INFORMATION SOURCES

This section lists additional databases, reports, or lists that contain information on operations that may impact groundwater but do not contain groundwater information. An example would be a database that tracks facilities that are required to monitor groundwater quality, but does not include the results of the groundwater monitoring.

Department of Commerce

Division of Environmental and Regulatory Services

Underground Storage Tank/Above Ground Storage Tank Registration

Karine Blazek (608) 267-1384

Information on petroleum tanks for residential, farms, gas stations, industrial, and schools. This is an ORACLE database with a client server component. Currently there are approximately 150,000 individual tank systems tracked and are identified by a site identification number. The information is statewide and is updated weekly.

All or part of this database is expected to be available on the internet after July 1998 at the COMM home page at: **[Http://badger.state.wi.us/commerce/](http://badger.state.wi.us/commerce/)**

Commerce Bulletin Board System

Karine Blazek (608) 267-1384

Provides information on Department of Commerce issues and activities. Within the bulletin board system is a searchable database of above and below ground storage tank locations. Selections can be made by Fire Dept. ID, specific tank ID, or county. This bulletin board system can be accessed by dialing (608) 264-6143. Modem settings are 8,N,1, and ANSI BBS.

PECFA TRACKER System

Miles Mickelson (608) 267-4545

Carol Klewin (608) 266-3713

Information on petroleum remediation costs PECFA claimants and cleanup actions. This is an ORACLE database with a client server component. Currently there are approximately 12,000 individual sites tracked and are identified by zip code and addresses. The information is statewide in extent and is updated daily. The database has GEO locator capabilities.

All or part of this database is expected to be available on the internet after July 1998 at the COMM home page at: **[Http://badger.state.wi.us/commerce/](http://badger.state.wi.us/commerce/)**

Department of Military Affairs, Wisconsin Emergency Government

Bureau of Technological Hazards

Hazardous Materials Storage (EPCRA 302, 303, 304, 311, 312, 324)

William Clare, EPCRA Program Manager (608) 242-3220

Database includes facility name, owner, industry classification, and whether facility

emergency response plan is required. Hazardous materials are listed and include the chemical name, chemical abstract (CAS) number, and maximum amount present at the facility at any one time. Federal law requires that trade secret and confidential location information be withheld from disclosure.

Department of Natural Resources

Bureau of Drinking Water and Groundwater

Class V Injection Wells

Rich Roth (608) 266-2438

A list of well locations.

Water Well Data Compact Disk (CD)

Judy Adams (608) 266-0153

This CD includes copies of databases in FILE MAKER PRO format and uncompressed. The CD includes copies of the following databases: Well Construction Reports, Well Comments, High Capacity Wells, Approved Water Treatment Devices, and Well Variances.

The Well Construction Report database consists of one file for each of our 72 counties. It was created 01/98 and includes well construction reports submitted by well drillers from 1988 through October 1997. The Well Comments database, contains additional information for some of the wells in the Well Construction Reports database. The High Capacity Well database contains a copy of the high capacity well approval file as of the 10/97 update. The Well Driller and Pump Installer License file is current as of mid January 1998. The Approved Water Treatment Device database contains the list of water treatment devices that have been approved by the Wisconsin Department of Commerce. The Well Variances database files are lists of wells that have had a variance approval given to allow them to be considered in compliance. The Landfill database file contains variances issued due to landfills and the Vartrack database file contains variances granted for other wells.

Bureau for Remediation and Redevelopment

Bureau for Remediation and Redevelopment and Bureau of Waste Management PC Bulletin Board System

Chris Zenchenko (608) 267-3543

A dial-up PC based bulletin board system for the distribution of program information, reports, studies, guidance documents, and program database files. The system currently has one phone line available with a 28.8k modem. The phone number is (608) 261-6455. Modem settings should be 8,N,1 and ANSI BBS. Files are mirrored on the Bureau's world wide web site.

Corrective Action Sites

Mark Gordon (608) 266-7278

Information on 150 hazardous waste facilities storing or treating hazardous waste after November 1980.

Hazard Ranking List

Robert Strous (608) 266-2699

Lists sites by name, location, hazard ranking score, reason for substantial danger (includes groundwater), and repair actions. One page descriptions of the sites explain sites in more detail.

Licensed SW Landfills Which are Identified As Handling Contaminated Soil On Their 1996 Tonnage Report

Julie Ivanov (608) 267-7550

This list is generated from the BRRTS System, and lists landfills that have accepted petroleum contaminated soils in the past. Landfill name, DNR district, contact person, address, and telephone number are available.

Registry of Waste Disposal Sites

Robert Strous (608) 266-2699

A list of known active, inactive, or abandoned solid and hazardous waste sites. Lists facility name, location, and current status such as "active site".

Superfund Sites in Wisconsin

Dale Ziege (608) 267-7533

A list of site names and locations.

Wisconsin Remedial Response Site Evaluation Report

Provides lists of contaminated facilities and their locations for:

1) The Inventory of Sites or Facilities Which May
Cause or Threaten To Cause Environmental Pollution

Bob Strous (608) 266-2699

2) The Spills Program List

Bob Strous (608) 266-2699

3) The Leaking Underground Storage Tank (LUST) Program List

Tom Fass (608) 267-3532

Bureau of Waste Management

Hazardous Waste Manifest

Aggie Cook (608) 266-2414

Tracks hazardous waste shipments from point of generation to disposal. This would include shipment of hazardous waste from all Wisconsin generators who choose to use the manifest forms.

Licensing

Regional Staff
Debrah Reddeman (608) 267-7567
Julie Ivanov (608) 267-7550

Another area in our SHWIMS database is the licensed facilities. This would include facilities licensed to transport hazardous waste, solid waste (including contaminated soil) and recycling waste, facilities who treat, store, and dispose of hazardous waste, and landfills.

Hazardous Waste Annual Reports

Debrah Reddeman (608) 267-7567

This database stores generation information for our large and small generators. Information includes the generator, type of waste they generated, how much generated, and where the waste was shipped to in a specific calendar year.

Hazardous Waste Notification

Aggie Cook (608) 266-2414
Debrah Reddeman (608) 267-7567

The notification form is one way to get into our SHWIMS (Solid and Hazardous Waste Inventory Management System) database system. In this database you can find facilities which have indicated that they generate, store, treat, dispose, or transport hazardous waste. It lists facility name, location address, type of activity, and contact name, address, and phone number.

Inventory and Licensing of Landfills

Julie Ivanov (608) 267-7550

Despite the title, it is no longer used for licensing. Currently it is used as a tracking system. The file contains facility information, type of landfill, acreage, and groundwater monitoring requirements.

Hazardous Waste Storage Tanks

Tim Mulholland (608) 266-0061

Provides facility location and contact information for facilities that have hazardous waste storage tanks.

Bureau of Watersheds

Large Animal Feeding Operations

Doris Thiele (608) 266-3906

List of all livestock operations which have WPDES permits to control the discharge of manure. Common components include nutrient management, runoff control, and manure storage. Approximately 60 operations including poultry, swine, beef cattle, and dairy.

Regional staff maintain a similar list for orders issued to smaller livestock operations to

control discharges of manure to the waters of the state.

Land Application Management Program (LAMP)

Greg Kester (608) 267-7611

This program was activated in November 1996. It tracks the generation, treatment, characteristics, compliance status, and final use or disposition of municipal wastewater treatment plant sludge, industrial sludge, industrial wastewater, by-product-solids, whey, septage, holding tank waste, and grease trap waste. It tracks every land application site in the state, every generator of sludge/waste, nutrient and/or hydraulic loadings per site, metal accumulation per site, volume of sludge land applied, sludge quality, permit requirements, and monitoring results. The database is a client server Oracle system.

Bureau of Integrated Science Services

Toxic Release Inventory

Wes Taylor (608) 264-6043

Database of manufacturing industry and public facilities required to comply with SARA 313. It includes paper mills, airports, food products, foundries, chemical manufacturers and other industries. Toxic chemicals included are hazardous, caustic, carcinogenic, or those which deplete the ozone layer.

Bureau of Enterprise Information Technology and Application

GIS coverages relating to groundwater are available from the DNR by contacting John Laedlein, at (608) 264-8916. You may also find out more about these coverages by visiting the DNR GIS web site at [Http://www.dnr.state.wi.us/org/at/et/geo/](http://www.dnr.state.wi.us/org/at/et/geo/). Examples of available coverages are:

Groundwater Susceptibility Model (1:500K)
Water Table Depth (1:250K)
State Well Point Coverage
Bedrock Depth (1:250K)

Many other base layer coverages are available. There may be fees associated with the acquisition of this information.

Department of Transportation

Bureau of Highway Operations

Chloride Storage Sites

Jay Wells (608) 266-9490

Lists site locations and salt storage capacity. Groundwater testing is conducted only when problems occur such as soil or surface water contamination.

V. WISCONSIN WORLD WIDE WEB SITES WITH GROUNDWATER OR RELATED INFORMATION

The following listing is intended to provide a starting point in searching the world wide web for groundwater or related information. These web sites have a general focus on Wisconsin and related issues. Many other world wide web resources are available beyond this listing.

Central Wisconsin Groundwater Center

[HTTP://WWW.UWSP.EDU/GROUNDWATER/](http://WWW.UWSP.EDU/GROUNDWATER/)

United States Geological Survey of Wisconsin

[HTTP://WWWDWIMDN.ER.USGS.GOV/](http://WWWDWIMDN.ER.USGS.GOV/)

Wisconsin Department of Agriculture, Trade and Consumer Protection

[HTTP://BADGER.STATE.WI.US/AGENCIES/DATCP/](http://BADGER.STATE.WI.US/AGENCIES/DATCP/)

Wisconsin Department of Commerce

[HTTP://BADGER.STATE.WI.US/AGENCIES/COMMERCE/](http://BADGER.STATE.WI.US/AGENCIES/COMMERCE/)

Wisconsin Department of Natural Resources

[HTTP://WWW.DNR.STATE.WI.US/](http://WWW.DNR.STATE.WI.US/)

Drinking Water and Groundwater

[HTTP://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/](http://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/)

Groundwater Information

[HTTP://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/GW/](http://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/GW/)

Geographic Services Section

[HTTP://WWW.DNR.STATE.WI.US/ORG/AT/ET/GEO/](http://WWW.DNR.STATE.WI.US/ORG/AT/ET/GEO/)

Remediation and Redevelopment and Hazardous Waste Files

[HTTP://WWW.DNR.STATE.WI.US/ORG/AW/RR/ERRHW/](http://WWW.DNR.STATE.WI.US/ORG/AW/RR/ERRHW/)

Wisconsin Groundwater Coordinating Council

[HTTP://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/GCC/](http://WWW.DNR.STATE.WI.US/ORG/WATER/DWG/GCC/)

Wisconsin Nonpoint Source Water Pollution Abatement Program

[HTTP://WWW.DNR.STATE.WI.US/EQ/WQ/NPS/](http://WWW.DNR.STATE.WI.US/EQ/WQ/NPS/)

Wisconsin Department of Transportation

[HTTP://WWW.DOT.STATE.WI.US/](http://WWW.DOT.STATE.WI.US/)

Wisconsin Geological and Natural History Survey

[HTTP://WWW.UWEX.EDU/WGNHS/](http://WWW.UWEX.EDU/WGNHS/)

Wisconsin Land Information Board

[HTTP://BADGER.STATE.WI.US/AGENCIES/WLIB/](http://BADGER.STATE.WI.US/AGENCIES/WLIB/)

Wisconsin Water Resources Center

[HTTP://www.library.wisc.edu/libraries/Water_Resources/wrrs.htm](http://www.library.wisc.edu/libraries/Water_Resources/wrrs.htm)

SUBCOMMITTEE MEMBERS (continued)

Education

Central Wisconsin Groundwater Center - Christine Mechenich (Chair)
University of Wisconsin System - Jim Peterson
Department of Agriculture, Trade and Consumer Protection - Jane Larson
Geological and Natural History Survey - Ron Hennings and Alexander Zaporozec
Governor's Representative - John Metcalf
Department of Natural Resources - Jeff Helmuth and Bill Rock
Department of Public Instruction - Dean Gagnon
Department of Commerce - Lynita Docken
Department of Health and Family Services - Lynda Knobeloch
Natural Resources Conservation Service - Jim Kaap
U.S. Geological Survey - Chuck Dunning
Department of Transportation - Bob Pearson

Local Government

Department of Natural Resources - Dave Lindorff (Chair)
Department of Agriculture, Trade, and Consumer Protection - Jim Vanden Brook
Geological and Natural History Survey - Ron Hennings
Department of Commerce - Roman Kaminski
Department of Health and Family Services - Chuck Warzecha
Central Wisconsin Groundwater Center - George Kraft
Wisconsin County Code Administrators - Ray Schmidt and Bruce Haukom
Wisconsin Rural Water Association - Gary Lueck
Council of Regional Planning Organizations - Chuck Kell and Bill Lane
Wisconsin Alliance of Cities - Jim Trierweiler